24. (Thrice Amended) A method for performing ophthalmic surgery comprising:

providing a basic laser having a pulsed output laser beam of a fundamental ultraviolet wavelength within a range of 193-220 nm exiting from an output window of said basic laser, [such that said laser emits a pulsed laser beam having] a repetition rate of 1 Hz to 1000 Hz, and an energy level exiting from said output window of said basic laser of no greater than 10 mJ per pulse [from said laser];

applying said pulsed laser beam onto corneal tissue; and

scanning said pulsed laser beam in a substantially overlapping pattern on said corneal tissue such that adjacent ablation spots on a single ablation layer of said corneal tissue significantly overlap one another.

26. (Not Amended) The method for performing ophthalmic surgery according to claim 24, wherein:

said substantially overlapping pattern is achieved using randomized scanning of said pulsed laser beam on said corneal tissue.

28. (Not Amended) The method for performing ophthalmic surgery according to claim 24, wherein:

said pulsed laser beam has a spot size on said corneal tissue of no greater than 1 mm.

29. (Not Amended) The method for performing ophthalmic surgery according to claim 25, wherein:

said pulsed laser beam has a spot size on said corneal tissue of no greater than 1 mm.

30. (Not Amended) The method for performing ophthalmic surgery according to claim 26, wherein:

said pulsed laser beam has a spot size on said corneal tissue of no greater than 1 mm.

32. (Amended) The method for performing ophthalmic surgery according to claim 24, wherein: [successive]

pulses of said pulsed laser beam corresponding to adjacent ablation spots on said single ablation layer overlap one another by [are overlapped] at least 50 percent.

35. (Not Amended) The method for performing ophthalmic surgery according to claim 24, wherein:

said pulsed laser beam is scanned synchronously with said pulses of said pulsed laser beam.

36. (Not Amended) The method for performing ophthalmic surgery according to claim 24, wherein:

an area of corneal tissue 0.05 to 0.5 microns deep is removed with each pulse of said pulsed laser beam.

37. (Not Amended) The method for performing ophthalmic surgery according to claim 24, wherein:

said pulsed laser beam is scanned in circular patterns.

38. (Not Amended) The method for performing ophthalmic surgery according to claim 24, wherein:

said pulsed laser beam is scanned in linear patterns.

39. (Twice Amended) A method for performing ophthalmic surgery comprising:

providing a basic laser having a pulsed output laser beam of a fundamental ultraviolet wavelength within a range of 193-220 nm exiting from an output window of said basic laser, [such that said laser emits a pulsed laser beam having] a repetition rate of at least 1 Hz to 1000 Hz, and an energy level exiting from said output window of said basic laser of 0.5 to 10 mJ per pulse [from said laser]; and

scanning said pulsed laser beam in a substantially overlapping pattern on said corneal tissue such that adjacent ablation spots on a single ablation layer of said corneal tissue significantly overlap one another .

40. (Not Amended) The method for performing ophthalmic surgery according to claim 39, wherein:

said pulsed laser beam has a spot size on said corneal tissue of no greater than 1 mm.

41. (Amended) The method for performing ophthalmic surgery according to claim 39, wherein: [successive]

pulses of said pulsed laser beam corresponding to adjacent ablation spots on said single ablation layer overlap one another by [are overlapped] at least 50 percent.

43. (Not Amended) The method for performing ophthalmic surgery according to claim 39, wherein:

said pulsed laser beam is pulsed at a repetition rate of at least 50 Hz.

44. (Not Amended) The method for performing ophthalmic surgery according to claim 39, wherein:

said pulsed laser beam is scanned synchronously with said pulses of said pulsed laser beam.

45. (Not Amended) The method for performing ophthalmic surgery according to claim 39, wherein:

an area of corneal tissue 0.05 to 0.5 microns deep is removed with each pulse of said pulsed laser beam.

46. (Not Amended) The method for performing ophthalmic surgery according to claim 39, wherein:

said pulsed laser beam is scanned in circular patterns.

47. (Not Amended) The method for performing ophthalmic surgery according to claim 39, wherein:

said pulsed laser beam is scanned in linear patterns.

48. (Amended) A method of performing laser ablation on tissue, said method comprising:

providing a basic laser having a pulsed output laser beam of a fundamental ultraviolet wavelength within a range of 193-220 nm exiting from an output window of said basic laser, [such that said laser emits a pulsed laser beam having] a repetition rate of 1 Hz to 1000Hz, and an energy level exiting from said output window of said basic laser of no greater than 10 mJ per pulse [from an output coupler of said laser];

providing a galvanometer scanner; and

significantly overlapping adjacent ablation spots on a single ablation layer of said tissue by controlling said pulsed output beam with said galvanometer scanner to provide a substantially overlapping pattern of beam pulses on said tissue.

49. (Amended) The method of performing laser ablation on tissue according to claim 48, wherein:

[an orientation of] said substantially overlapping pattern is achieved by placing said ablation spots on said single ablation layer of said tissue in random order [using randomized scanning of said pulsed output beam on said tissue].

53. (Not Amended) The method of performing laser ablation on tissue according to claim 48, wherein:

said ultraviolet wavelength is in a range of 193 to 215 nm.

54. (Not Amended) The method of performing laser ablation on tissue according to claim 48, wherein:

said ultraviolet wavelength is 193 nm.

55. (Amended) The method of performing laser ablation on tissue according to claim 48, wherein:

said pulsed output laser beam has an energy level exiting from said output window of said basic laser in a range of 0.05 to 10 mJ per pulse.

57. (Not Amended) The method of performing laser ablation on tissue according to claim 48, wherein:

said pulsed output beam has a spot size on said tissue of no greater than 1 mm.

58. (Not Amended) The method of performing laser ablation on tissue according to claim 55, wherein:

said pulsed output beam has a spot size on said tissue of no greater than 1 mm.

59. (Not Amended) The method of performing laser ablation on tissue according to claim 50, wherein:

said pulsed output beam has a spot size on said tissue of no greater than 1mm.

60. (Amended) The method of performing laser ablation on tissue according to claim 48, wherein: [successive]

pulses of said pulsed output beam corresponding to adjacent ablation spots on said single ablation layer overlap one another by [are overlapped] at least 50 percent.

63. (Not Amended) The method of performing laser ablation on tissue according to claim 48, wherein:

said pulsed output beam is scanned synchronously with said pulses of said pulsed output beam.

64. (Not Amended) The method of performing laser ablation on tissue according to claim 48, wherein:

an area of corneal tissue in a range of 0.05 to 0.5 microns deep is removed with each pulse of said pulsed output beam.

65. (Not Amended) The method of performing laser ablation on tissue according to claim 48, wherein:

said pulsed output beam is scanned in circular patterns.

66. (Not Amended) The method of performing laser ablation on tissue according to claim 48, wherein:

said pulsed output beam is scanned in linear patterns.

67. (Not Amended) The method of performing laser ablation on tissue according to claim 48, wherein:

said pulsed output beam is scanned in concentric circles.

68. (Not Amended) The method of performing laser ablation on tissue according to claim 67, wherein:

said concentric circles have increasing diameters.

sub E1

69. (Amended) An apparatus for ablating tissue, comprising:

a basic laser having a pulsed output laser beam of a fundamental ultraviolet wavelength within a range of 193-220 nm exiting from an output window of said basic laser, and [adapted to emit a pulsed output beam having] a repetition rate of 1 Hz to 1000 Hz; and

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a scanner constructed and arranged to control said pulsed output beam into a substantially overlapping pattern of beam pulses on said tissue such that adjacent ablation spots on a single ablation layer of said corneal tissue significantly overlap one another.

70. (Not Amended) The apparatus for ablating tissue according to claim 69, wherein:

said substantially overlapping pattern of beam pulses has an orientation which is achieved using a randomized scanning of said pulsed output beam on said tissue.

sub E3

71. (Amended) The apparatus for ablating tissue according to claim 69, wherein:

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said pulsed output laser beam has an energy level exiting from said output window of said basic laser of no greater than 10 mJ per pulse.

72. (Amended) The apparatus for ablating tissue according to claim 69, wherein:

said scanner is constructed and arranged to overlap adjacent beam pulses corresponding to adjacent ablation spots on said single ablation layer by [on said tissue] at least 50 percent.

75. (Amended) The apparatus for ablating tissue according to claim 69, wherein:

said basic laser is an excimer laser.

76. (Amended) An ophthalmic surgery apparatus for performing corneal refractive surgery by reshaping a portion of a corneal surface, said apparatus comprising:

a basic laser having a pulsed output laser beam of a fundamental ultraviolet wavelength within a range of 193-220 nm exiting from an output window of said basic laser, and [adapted to emit a pulsed laser beam having] an energy level exiting from said output window of said basic laser of less than 10 mJ per pulse [from said laser]; and

a computer-controlled scanning device coupled to said basic laser to cause a significant overlap of adjacent ablation spots on a single ablation layer [such that pulses of said beam are substantially overlapped] to achieve a smooth ablation of corneal tissue in an overlapped area between adjacent ablation spots.

78. (Amended) A method of performing corneal refractive surgery by reshaping a portion of corneal surface, said method comprising:

pulsing [having] a basic laser having an output laser beam of a fundamental ultraviolet wavelength within a range of 193-220 nm exiting from an output window of said basic laser, a repetition rate of 1 to 1000 pulses per second, and an energy level exiting from said output window of said basic laser of no greater than 10 mJ per pulse; and

substantially overlapping adjacent ones of a plurality of ultraviolet laser beam pulses over [an area of] a single ablation layer on a corneal surface sufficient to ablate a depth of between 0.05 and 0.5 microns of corneal tissue per ultraviolet laser beam pulse [; said laser beam pulses having an energy level of no greater than 10 mJ per pulse from an output coupler of said laser; and said laser beam pulses having a pulse repetition rate of 1 to 1000 pulses per second].

80. (Not Amended) The method of performing corneal refractive surgery by reshaping a portion of a corneal surface according to claim 79, further comprising:

selecting a scanner to scan said overlapping plurality of laser beam pulses, said scanner deflecting said laser beam pulses a predetermined angle.

81. (Not Amended) The method of performing corneal refractive surgery by reshaping a portion of a corneal surface according to claim 80, wherein:

said selected scanner is a galvanometer scanner.

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82. (Amended) An ophthalmic surgery apparatus, comprising:

a basic laser having an output laser beam of a fundamental ultraviolet wavelength within a range of 193-220 nm exiting from an output window of said basic laser, and [adapted to emit a pulsed beam] an energy level exiting from said output window of said basic laser of less than about 10 mJ per pulse [from said laser]; and

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a computer-controlled scanning device coupled to said basic laser to cause a significant overlap of adjacent ablation spots on a single ablation layer of [pulses of said pulsed laser beam on] said corneal surface to achieve a smooth ablation of corneal tissue in an overlapped area between adjacent ablation spots.

83. (Not Amended) The ophthalmic surgery apparatus according to claim 82, wherein:

said pulses are overlapped in a range of 50 to 80 percent.

85. (Not Amended) The ophthalmic surgery apparatus according to claim 82, wherein:

said pulsed beam has a spot size on said corneal tissue of less than or equal to 2 mm.

87. (Not Amended) The ophthalmic surgery apparatus according to claim 82, wherein said scanning device comprises:

a galvanometer.

88. (Not Amended) The ophthalmic surgery apparatus according to claim 87, wherein:

said repetition rate of said laser is synchronized with said galvanometer.

89. (Not Amended) The ophthalmic surgery apparatus according to claim 82, wherein:

successive pulses of said pulsed beam are rotated through a linear-scan angle by said scanning device.

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90. (Amended) A method for performing corneal refractive surgery by reshaping a portion of corneal surface, comprising:

selecting a basic laser having a pulsed output laser beam of a fundamental ultraviolet wavelength within a range of 193-220 nm exiting from an output window of said basic laser, [such that said laser emits a pulsed output beam of ultraviolet wavelength and having] and an energy level exiting from said output window of said basic laser of less than 10 mJ/pulse [from said laser];

selecting a scanning mechanism for scanning said pulsed output laser [output] beam;

coupling said pulsed output laser beam to said scanning mechanism for scanning said pulsed output laser beam over [a predetermined] said corneal surface;

controlling said scanning mechanism to deliver [the] said scanning pulsed output laser beam in [an] a substantially overlapping pattern [onto a plurality of positions] on said corneal surface such that adjacent ablation spots on a single ablation layer of said corneal tissue significantly overlap one another to at least one of photoablate and photocoagulate corneal tissue; and

removing from 0.05 to 0.5 microns of corneal tissue per pulse [overlapped to remove tissue to a desired depth], whereby a patient's vision is corrected by said reshaping of said portion of said corneal surface of said patient's eye.

91. (Amended) A method for performing ophthalmic surgery, comprising:

providing a basic laser having a pulsed output laser beam of a fundamental ultraviolet wavelength within a range of 193-220 nm exiting from an output window of said basic laser, [such that said laser emits a pulsed ultraviolet laser beam having] and an output energy level exiting from said output window of said basic laser of no greater than 10 mJ/pulse [from said laser];

applying said pulsing ultraviolet laser beam onto corneal tissue; and

scanning said pulsing laser beam in a purposefully substantially overlapping pattern on said corneal tissue such that adjacent ablation spots on a single ablation layer of said corneal tissue significantly overlap one another.

93. (Not Amended) The method of performing ophthalmic surgery according to claim 91, wherein:

said pulsing ultraviolet laser beam is pulsed at a repetition rate of 1 to 1000 Hz.

94. (Not Amended) The method of performing ophthalmic surgery according to claim 91, wherein:

said pulsing ultraviolet laser beam is sufficient to ablate a depth in a range of 0.05 and 0.5 microns of corneal tissue per pulse.

95. (Not Amended) The method of performing ophthalmic surgery according to claim 91, wherein:

said substantially overlapping pattern is achieved using a randomized scanning of said pulsing laser beam on said corneal tissue.